

hy-gain®



INSTRUCTION MANUAL

Antennas, Towers and Accessories for
Commercial, Industrial, Military and
Private use.

MODEL S-1905

Tactical HF Dipole Antenna System

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SO-1905-A-010

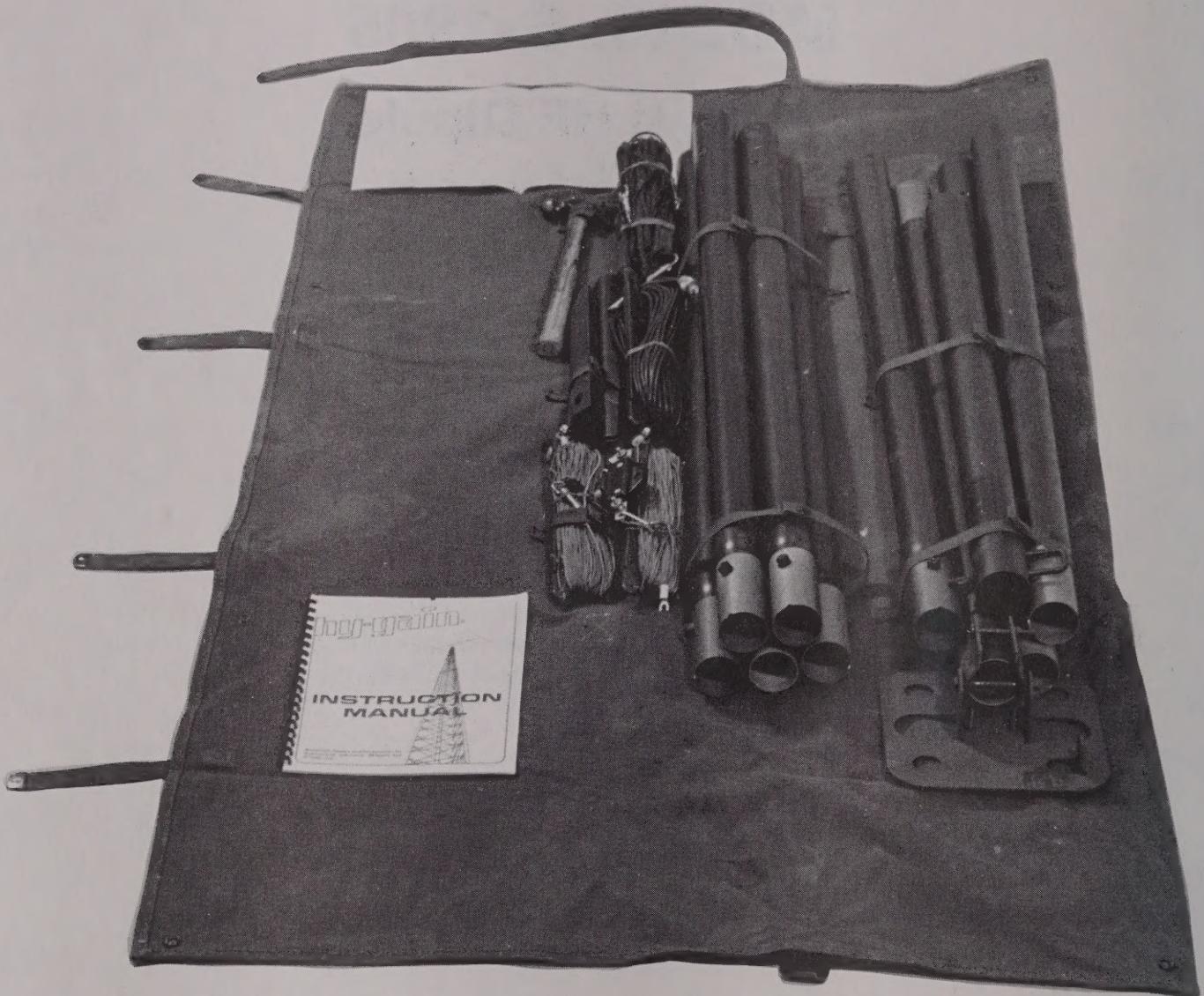


Figure 1
Component Location in Carrying Container

General Description

The Model S-1905 Doublet and 30-foot center support mast provide a light weight portable manpack unit that operates on pre-set frequencies from 2 to 30 MHz.

The elements are fabricated from braided nylon rope, which has conductors woven directly into it. This provides a highly flexible and very light weight element.

The elements are calibrated in increments from 0.5 to 5.0 MHz for simplified adjustment in the field. The doublet comes complete with 50 feet of RG-58 A/U coaxial cable. A flat storage bobbin for each element is an integral part of the antenna. During operation the unused portion of each element is shorted out and remains on the storage bobbin. The input connector and connections to the elements are molded in a Cycolac® center insulator. The antenna is supported at each end by 100 foot lengths of braided nylon rope to elevate the elements above the ground.

This quick-erectable system can be installed in any soil condition in less than 10 minutes utilizing two (2) men.

Specifications

Electrical

Frequency Range (in MHz)	.....any discrete frequency from 2 to 30 MHz
Power Handling Capability	.....840 watts average
Polarization	.....horizontal
VSWR	.....2:1 maximum relative to 50 ohms
Input Impedance	.....52 ohms unbalanced
Input Connector	.....SO-239 at center of doublet PL-259 at input of coaxial cable
Coaxial Cable	.....RG-58 A/U, 50 ft. length

Mechanical

Element Length (Fully Extended)	.....154 feet
Element Material	.....braided nylon wire rope
Bobbin Material	.....Lexan®
Center Insulator	.....high impact Cycolac®
Mounting Rope	.....braided nylon in two 100 ft. lengths
Carrying Weight	.....29.69 lbs.
Maximum Height (center)	.....30 feet

Installation

Secure the mast hinge base plate to the ground using two (2) each, 12-inch ground anchors.

Assemble eight (8) each common mast sections to the base plate and slip the guy ring assembly over the top section.

Attach the last common mast section and the antenna mast head.

Attach the antenna to the mast head by loosening the wing nut on the mast head hanger and pulling the hanger out until the hanger can be rotated. Install the antenna center insulator over the hanger and rotate the hanger back into position. Tighten the wing nut securely until the hanger is fully seated in the mast head. See Figure 5.

Unwind the three (3) guy ropes and position along side the mast.

Position and install three (3) each 12-inch ground anchors as shown in Figure 3.

Unwind the element mounting ropes ($\frac{1}{8}$ " nylon) from the element bobbins and allow them to hang freely during mast erection.

Hinge the support mast upright and attach the three (3) guy rope fasteners to their respective ground anchors. Hand tension the guy ropes the same amount on each rope.

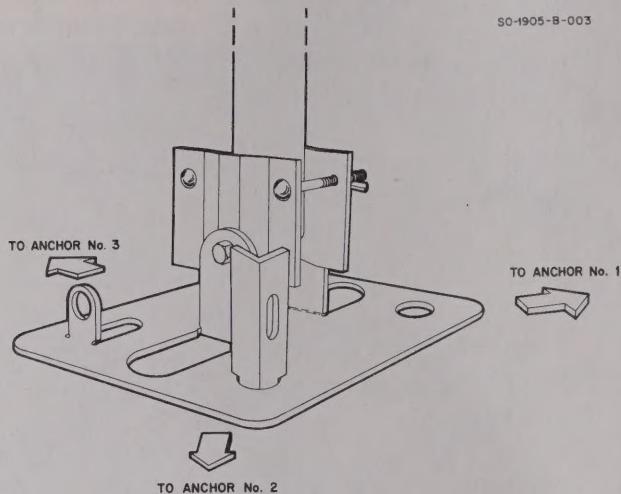


Figure 2. Mast Base Plate

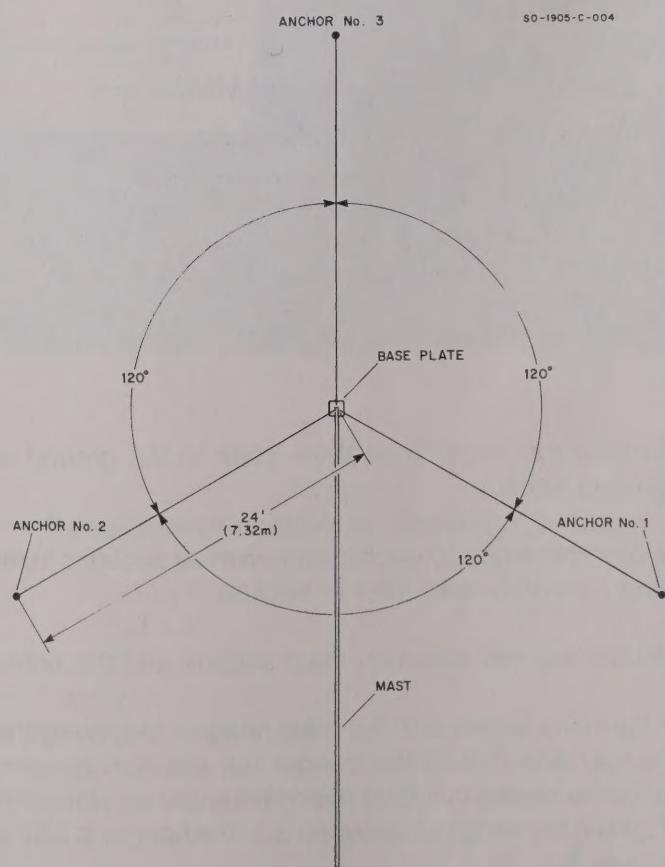


Figure 3. Plot Plan

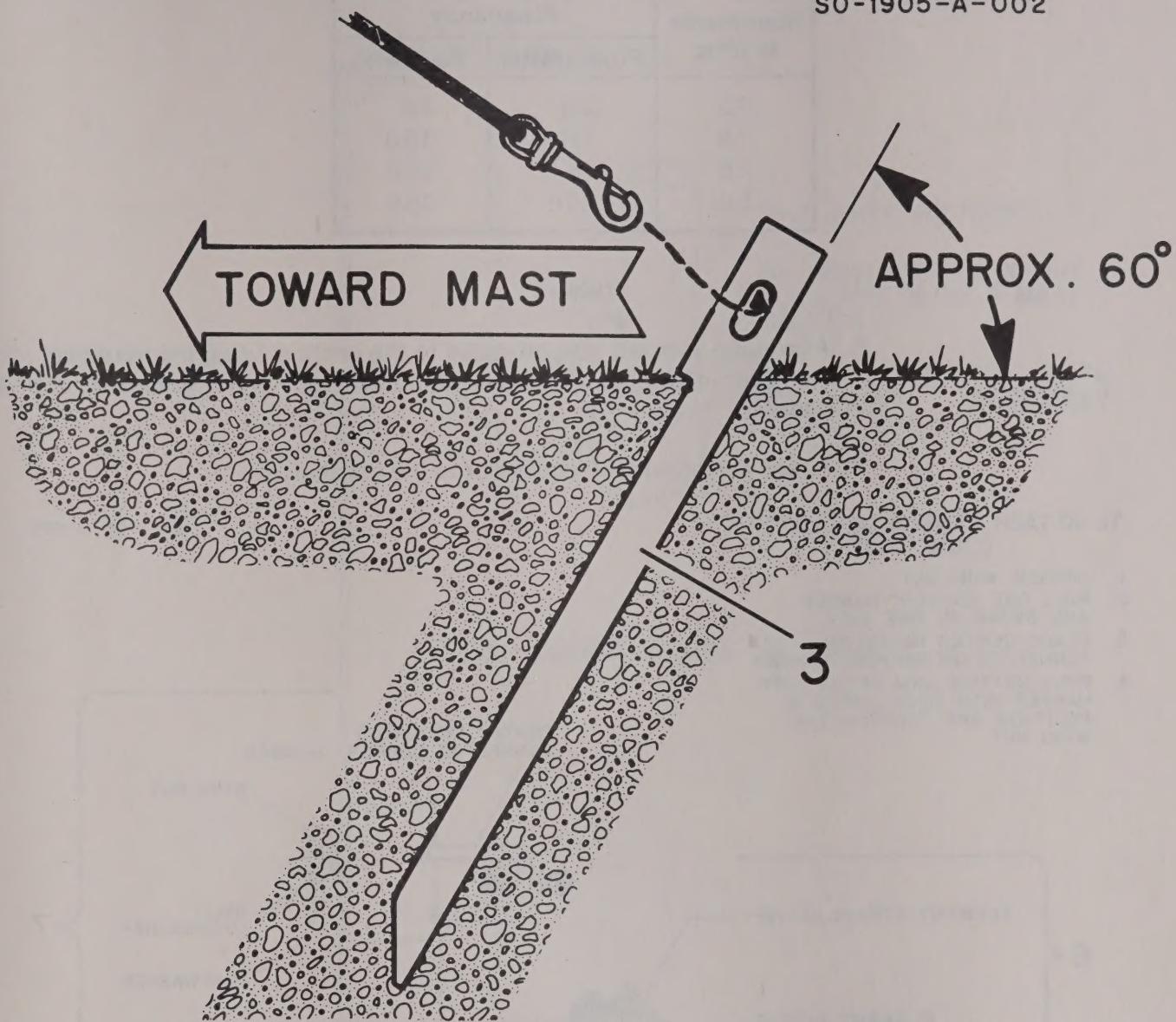


Figure 4
Mast Guy Anchor

**Element
Adjustment**

1. Unwind support cord.
2. Loosen reel binding post knurled nut and remove twine.
3. Select the frequency desired. The antenna elements (braided cable) have incremental frequency markers. See Table 1.
4. Select the same frequency on both elements. Fold the element cable directly in front (toward the center insulator) of the sleeve and insert the folded element cable into the hole in the binding post. Tighten the knurled nut to hold the element in place.

Increments in MHz	Frequency	
	From (MHz)	To (MHz)
0.5	2.0	7.0
1.0	7.0	15.0
2.5	15.0	20.0
5.0	20.0	30.0

Table 1

5. Attach the element support ropes to the anchors using the maximum rope extension allowable to elevate the bobbins above the ground as high as possible.
6. Attach the coaxial RF connector to the transceiver.

TO ATTACH CENTER INSULATOR /
CONNECTOR

SO-1905-C-006

1. LOSEN WING NUT
2. PULL OUT SUPPORT HANGER
AND SWING TO ONE SIDE
3. PLACE CENTER INSULATOR /
CONNECTOR ON SUPPORT HANGER
4. PUSH BOTTOM ARM OF SUPPORT
HANGER INTO HOLE, HOLD IN
POSITION AND TIGHTEN THE
WING NUT.

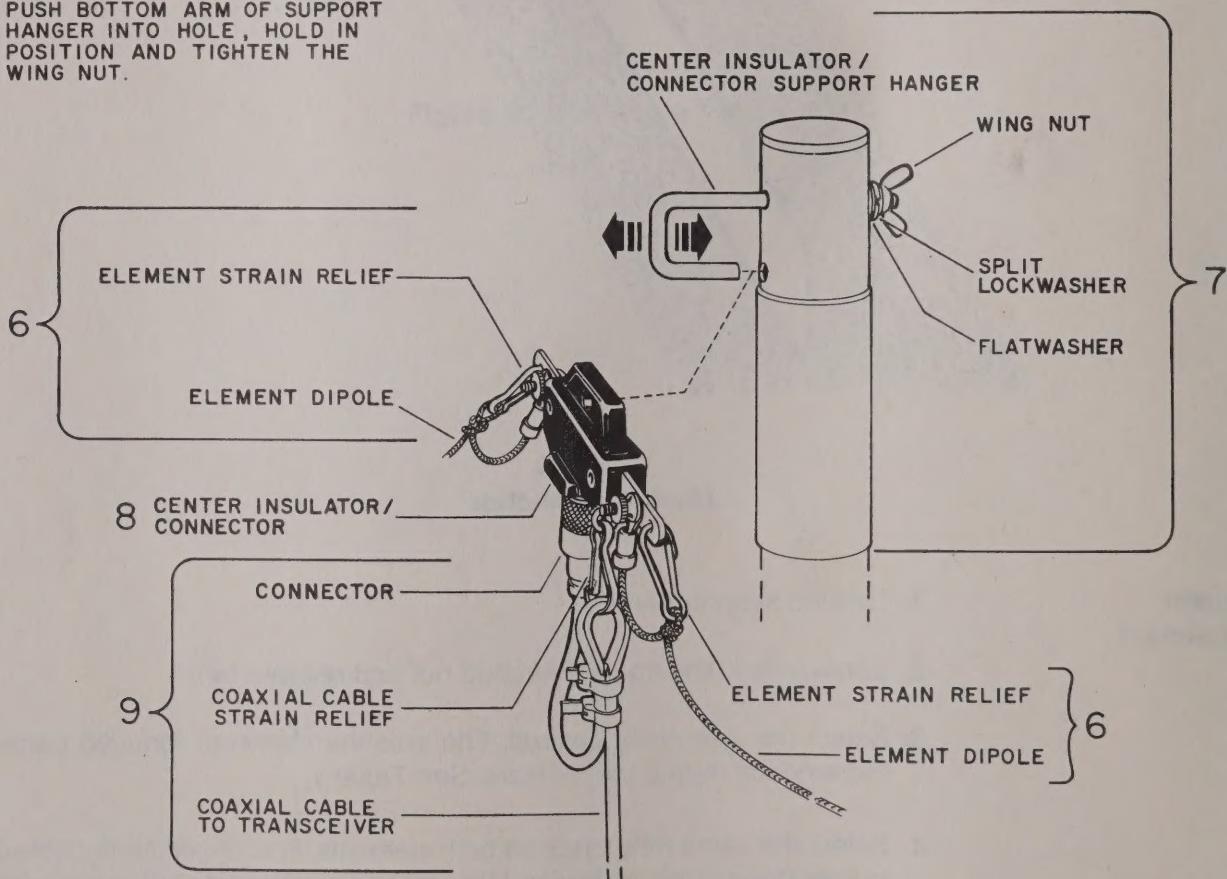


Figure 5
Attaching Center Insulator/Connector to Support Hanger

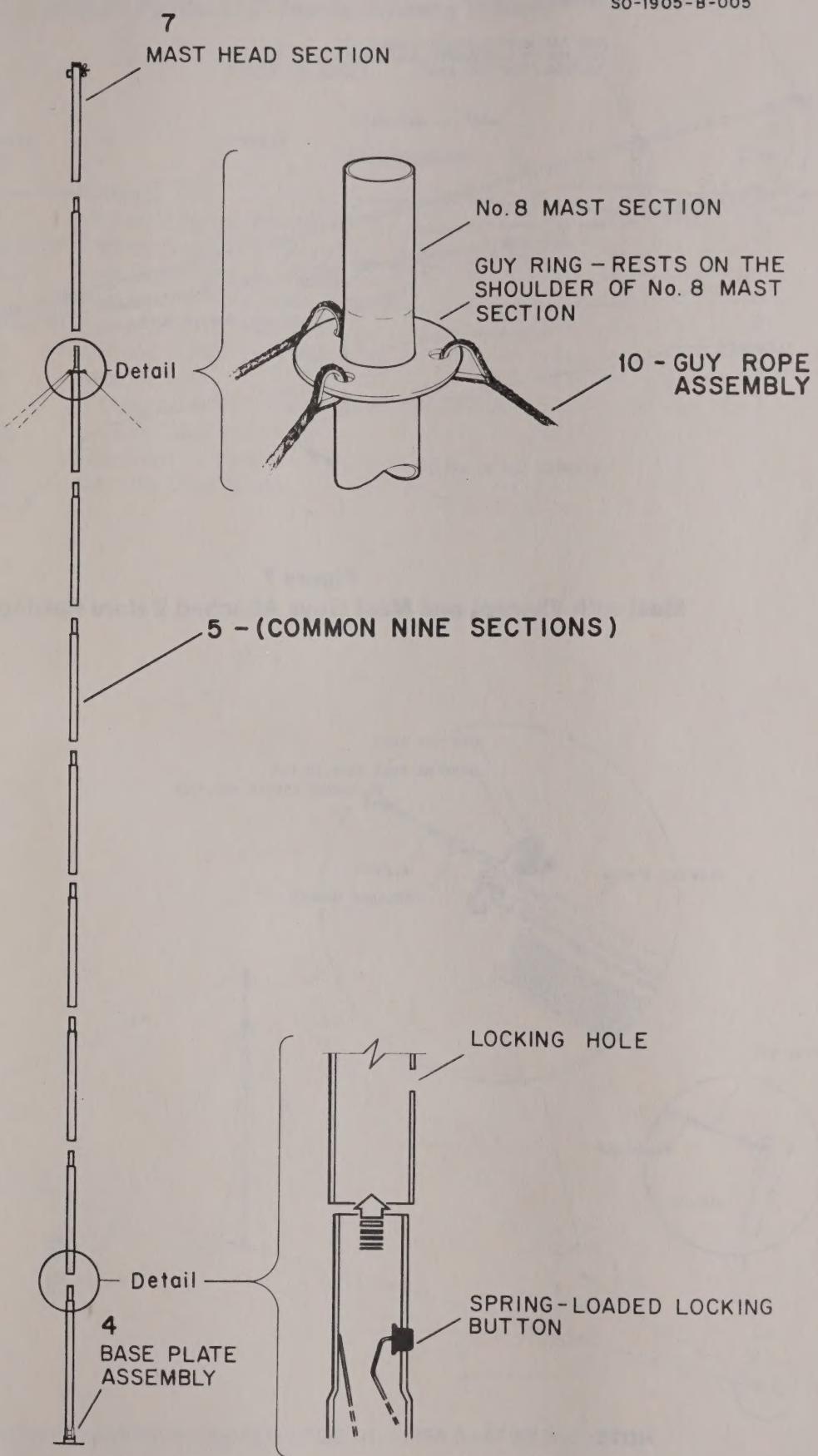


Figure 6
Mast Assembly

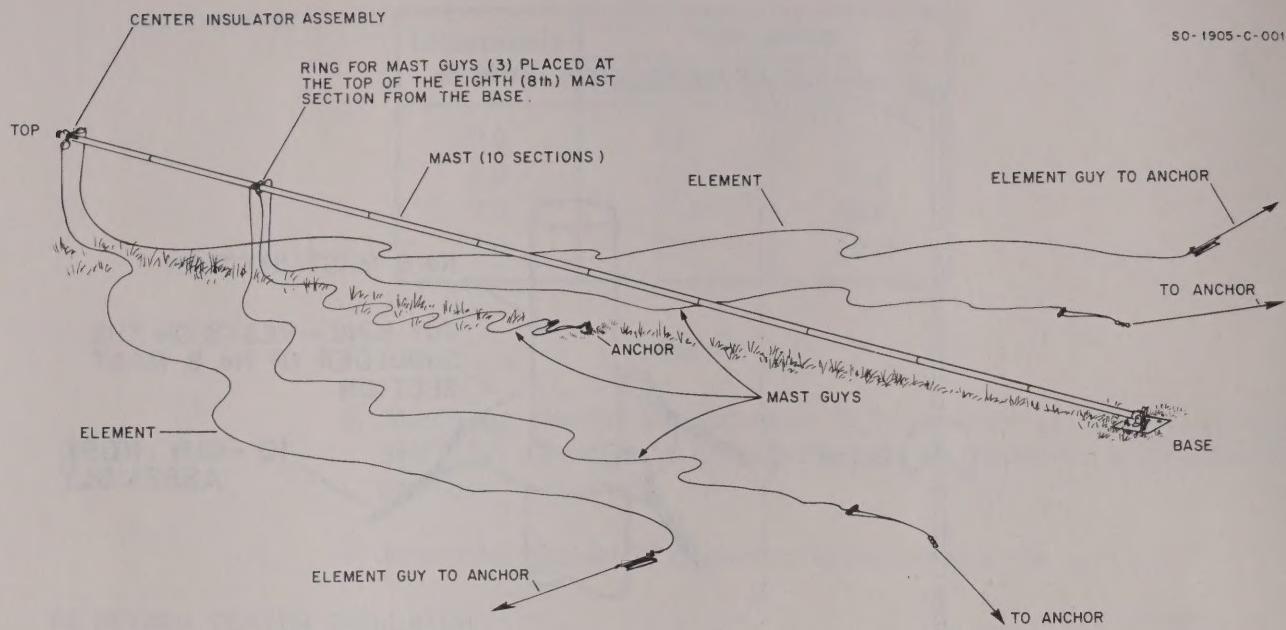
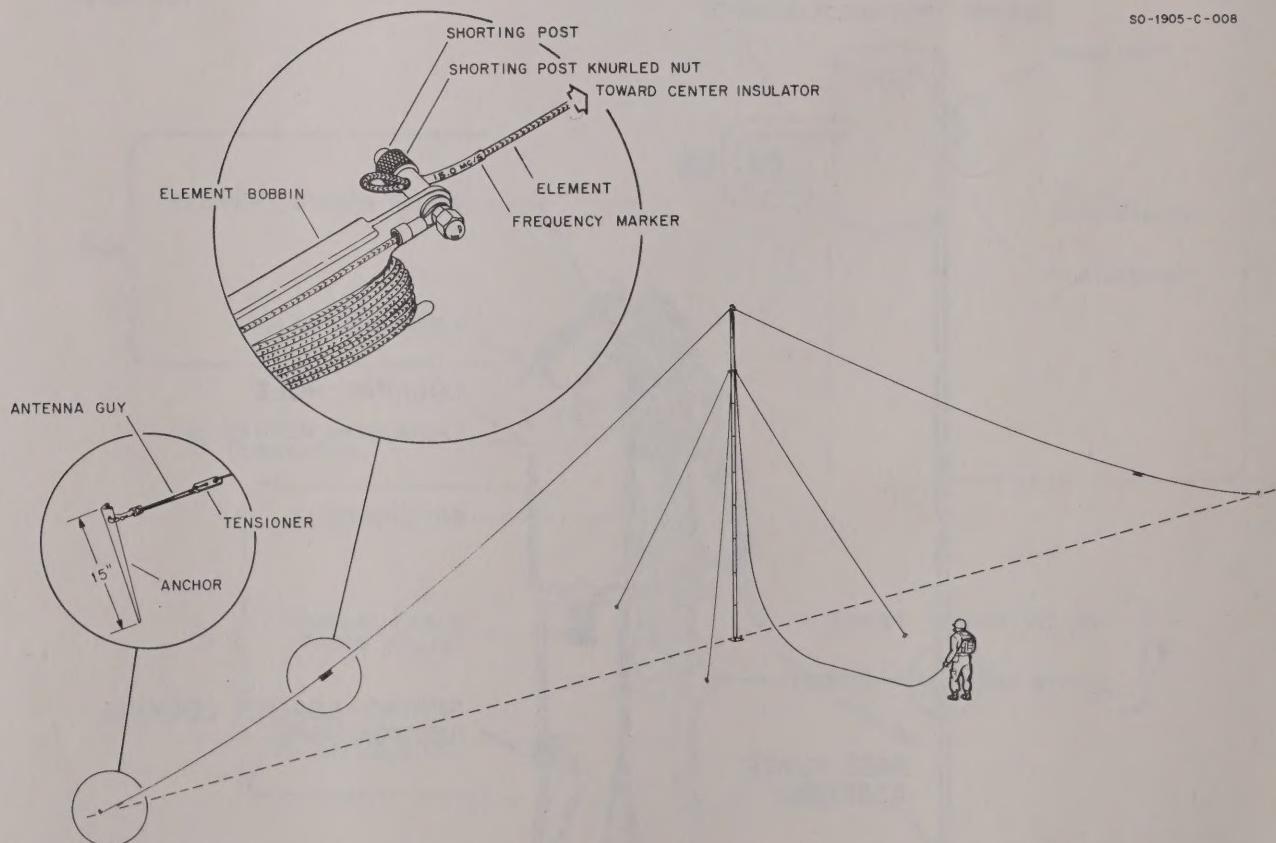


Figure 7
Mast with Element and Mast Guys Attached Before Raising Mast



NOTE: THE DETAILS APPLY TO BOTH ELEMENT BOBBIN AND ANCHORS

Figure 8
Overall View

S-1905 Tactical HF Dipole Antenna System

PARTS LIST

Item No.	Part No.	Description	Qty
1	350543	Hammer, 1 lb.	1
2	377860	Anchor, antenna ground, 15"	2
3	380663	Anchor, ground, 12"	5
4	870358-1	Mast Base Plate Assembly	1
5	870362	Mast Section, common aluminum	9
6	872179	Element Dipole Assembly	2
7	872180	Antenna Mast Head Assembly	1
	872181	Antenna Array	1
8	875327	Center Insulator Assembly	1
9	878895	Coax Cable Assembly	1
10	879888	Guy Rope Assembly	1
11	930027	Carrying Case (Bag)	1

ONE YEAR LIMITED WARRANTY

Hy-Gain/TELEX COMMUNICATIONS, INC. warrants all products manufactured by it and bearing the Hy-Gain model numbers to be free from defective material and workmanship and agrees to repair such products under normal use and service, if investigation discloses the defect to be the fault of our manufacture. Hy-Gain's obligation under this warranty is limited to repairing any such product which, upon our examination, proves to be so defective. Hy-Gain reserves the right to determine if defective products are to be returned to the factory for repairs. If return of products is required, transportation will be prepaid by the purchaser, within one year from date of original purchase price of the product.

This warranty applies only to the original purchaser. Warranty valid only in the U.S.A.

Upon receipt of equipment, the purchaser is responsible for checking the contents for damage. Any shipping damage claims should be referred to the carrier.

This warranty does not apply to any Hy-Gain products which have been repaired, worked upon or altered by persons not authorized by Hy-Gain to do so, or products to which the repair has injured the stability or reliability of such product or which has been the subject of misuse, negligence or accident, or the serial number of which has been removed, altered, effaced, or in any way rendered unidentifiable. Neither does this warranty apply to any of our products which have been connected, installed, used, or otherwise adjusted other than in accordance with instruction furnished by Hy-Gain. Nor does Hy-Gain assume any liability for consequential damages and, in any event, our liability shall in no case exceed the original purchase price of the product.

Accessories supplied by, but not manufactured by Hy-Gain, shall carry only such warranty as is available from the manufacturer of such goods and are specifically excluded from Hy-Gain warranties.

This warranty is void if Hy-Gain shall inspect equipment and find it to have been modified, improperly installed or used. This warranty is expressly in lieu of all other warranties expressed or implied, and all other obligations or liabilities on the part of Hy-Gain and no person, including any dealer, agent, distributor, or representative of Hy-Gain is authorized to assume for Hy-Gain any liability on its behalf or in its name, except to refer purchasers to this warranty.

All claims of defect or shortage should be addressed to:

CIM Department
Hy-Gain
TELEX COMMUNICATIONS, INC.
8601 N.E. Highway 6
P.O. Box 5579
Lincoln, Nebraska 68505 U.S.A./Phone: (402) 467-5321

You must furnish model number, date, place, and proof of purchase, such as a copy of the sales receipt to establish warranty. Your letter should include all pertinent details along with part or item numbers involved. Do not return anything until requested to do so. No warranty card is furnished. You must supply the above information.

Any returned items must have prior authorization. Unexpected returns are greatly delayed in handling. These delays can be avoided by writing in advance and furnishing the necessary information.

DESIGN: Hy-Gain reserves the right to make changes in design and improvement on its products without assuming any obligation to install the same on any of its products previously manufactured. Further, Hy-Gain reserves the right to ship new and/or improved products which are similar to the form, fit and the function of products originally ordered.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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